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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,665	01/27/2004	Young-Kwan Lee	04132-P0001A	3023
24126	7590	11/16/2005	EXAMINER LE, TUNG X	
ST. ONGE STEWARD JOHNSTON & REENS, LLC 986 BEDFORD STREET STAMFORD, CT 06905-5619			ART UNIT 2821	PAPER NUMBER

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/766,665	LEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tung X. Le	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>01/27/2004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. This is a response to the applicant(s)'s filing on 01/27/2004. In virtue of this filing, claims 1-4 are currently presented in the instant application.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the claim" in line 8 and line 9 that is not clear to show what is a particular chamber for this independent claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen at al.(U.S. Patent No. 6,463,875).

With respect to claim 1, Chen discloses an antenna (105) structure for an inductively coupled plasma generator (see figure 1, element [100]), the antenna structure having a powered end (see figure 4, elements [V1, V2]) to which RF power being applied and a ground end (see figure 4, elements [V1', V2']) connected to the ground, wherein at least two loop antenna elements (see figure 3, elements [coil1, coil2]) being disposed electrically in parallel with each other (see figure 3), the powered ends [V1,V2) and ground ends [V1',V2'] of the respective antennas being symmetrically with respect to the center of the antennas (see figure 5, element [cylinder]), and the antennas crossing each other (see figure 6) such that the powered ends and ground ends thereof being disposed at a part far from a chamber [150] and central parts thereof being disposed at a part close to the chamber (see figures 1 and 5) (see Col. 10, lines 12-45) .

With respect to claims 2-3, Chen discloses that the respective antennas [coil1, coil2] cross each other vertically and horizontally (see figure 5, element [part1, part2]).

***Allowable Subject Matter***

6. Claim 4 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or suggest, alone or in combination, the following limitations: "An internal antenna and an external antenna, each rectangular shaped, are parallel connected to each other, the internal antenna being installed such that two

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rectangular antenna elements are symmetrically superposed in two-ply loops, the external antenna being installed such that four L-shaped antenna elements, each having two sides, are symmetrically disposed in two-ply loops, and wherein each powered end is disposed farthest from the chamber and each ground end is disposed near to the chamber”.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stimson et al., (US 6,297,595) – Method and Apparatus for Generating a Plasma

Nogami (US 6,436,304) - Plasma Processing Method

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Le whose telephone number is 571-272-6010.

The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner  
Tung Le  
AU 2821

*Shih-Chao Chen*  
SHIH-CHAO CHEN  
PRIMARY EXAMINER

11/7/05